Express Mail: EV 269189023 US
Inventor: Jerrold V. Hauck
Docket No.: APPL-P2839

Filed: December 29, 2003
Title: OPTIMIZED P1394
Attorney: John W. Crosby

Filed: December 29, 2003
Title: OPTIMIZED P1394a GAP CALCULATION WHEN PINGING
Attorney: John W. Crosby
Sierra Patent Group, Ltd.

FIG. 1

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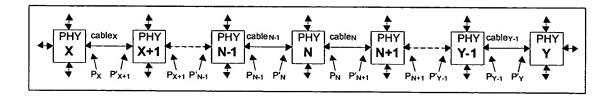


FIG. 2

```
t_1
                        t_2
\mathtt{P}_{\mathtt{X}}
    --< DP | Packet | DE >-----
                                                       ---< ARB |
                                   ----- ARB |
P_{X+1}
    ----< DP | Packet | DE >-----
       ----< DP | Packet | DE >----- ARB |
P_N
          ----< DP | Packet | DE >----- ARB |
P_{N+1}
           -----< DP | Packet | DE >----- ARB |
P_{Y-1}
            ----- DP | Packet | DE >---- ARB |
              ----- DP | Packet | DE >---< ARB |
                            t_3
                                          t<sub>5</sub> t<sub>6</sub>
```

FIG. 3

```
t_3
                                         t4
                                                                         t_5
                                                                                         t_6
                           Packet
                                                   DATA END
                                                                                   t_{5b}
i<sub>Y</sub>:
                                            stop tx packet()
                                                                                   < start tx packet()
                             t<sub>3</sub>'
                                             t<sub>4</sub>′
                                                                                 t<sub>5</sub>'
P<sub>Y</sub>:
                                Packet |
                                                         DATA END
                                                                                               ARB
```

FIG. 4

```
t_0
                     \mathsf{t}_1
                          t_2
\mathtt{P}_{\mathtt{X}}
    --< DP | Packet | DE >---
         -< DP | Packet | DE >----
            -< DP | Packet | DE >----- ARB |
             ---< DP | Packet | DE >----< ARB |
P_N
P_{N+1}
               ----< DP | Packet | DE >----- ARB |
P_{Y-1}
              ----- DP | Packet | DE >----- ARB |
               ----- DP | Packet | DE >---< ARB |
                              tз
                                        t<sub>4</sub>
                                             t_5 t_6
```

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FIG. 5

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```
to
                 t_1
                     t_2
                                     t_6
    --< DP | Packet | DE >----- ARB |
   ----< DP | Packet | DE >----- ARB |
P_{X+1}
P_{N-1} \\
      ----< DP | Packet | DE >----< ARB |
      ------ DP | Packet | DE >----- ARB |
P_N
P_{N+1}
          -----< DP | Packet | DE >-----< ARB |
\mathtt{P}_{\mathtt{Y-1}}
            P'<sub>Y</sub>
            ----- DP | Packet | DE >----- ARB |
                         t_3
                                 t₄
                                     t_5
```

FIG. 6

```
t_3
                                t4
                                                            t_5
                                                                   t7
                       Packet |
                                           DATA END
                                                                           ARB
                                                                    \mathsf{t}_{7\mathsf{a}}
iy:
                                     stop tx packet() >---< ARB seen
                         t<sub>3</sub>'
                                      t<sub>4</sub>'
                                                                   t5' t7'
P_{Y}:
                 < DP | Packet
                                                DATA END
                                                                                 ARB
                                                                    >---<
```

FIG. 7

```
t_0
                 t_1
                     t_2
\mathtt{P}_{\mathtt{X}}
    --< DP | Packet | DE >----- ARB |
    ----< DP | Packet | DE >----< ARB |
       ----< DP | Packet | DE >----- ARB |
P_{N-1}
          ----< DP | Packet | DE >----- ARB |
P_N
P_{N+1}
          ----- DP | Packet | DE >----- ARB |
P_{Y-1}
           ----- DP | Packet | DE >----- ARB |
          ----- DP | Packet | DE >----- ARB |
                          t_3
```

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FIG. 8

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```
t<sub>1</sub>'
                                                          t7'
P_{Link} -< Transmit | IDLE >-
                                                     ---< RX
          t_0
                  t_1
                                                      t<sub>7</sub>
                                   ----- ARB |
    --< DP | Packet | DE >----
P_{X+1}
    ----< DP | Packet | DE >----- ARB |
    ----- DP | Packet | DE >----- ARB |
P_{N}
           ----< DP | Packet | DE >-----< ARB |
P_{N+1}
             ----< DP | Packet | DE >----- ARB |
P_{Y-1}
              -----< DP | Packet | DE >----< ARB |
               ----- DP | Packet | DE >---< ARB |
                          t_3
```

FIG. 9

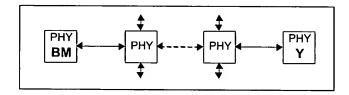


FIG. 10

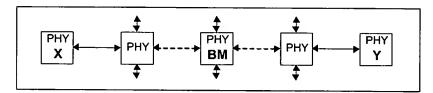


FIG. 11

